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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/826,878	SATO, KOICHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Timothy L Rude	2871	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 01 March 2004.
2. ☒ The allowed claim(s) is/are 16,17,22,23,25 and 27.
3. ☒ The drawings filed on 06 April 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>20031231</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

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## DETAILED ACTION

### *Claims*

Claims 12, 13, and 18-20 are cancelled. Claims 14 and 16 are amended.

### *Election/Restrictions*

This application is in condition for allowance except for the presence of claims 14, 15, 21, 24, and 26 drawn to a species non-elected without traverse. Accordingly, claims 14, 15, 21, 24, and 26 have been cancelled.

### *Allowable Subject Matter*

Claims 16, 17, 22, 23, 25, and 27 are allowed.

The following is an examiner's statement of reasons for allowance:

As to claim 16, relevant prior art of record did not disclose, alone or in combination, a liquid crystal device, including a liquid crystal layer comprising a discotic liquid crystal and a rod-shaped liquid crystal as claimed, wherein the discotic liquid crystal is in a nematic discotic phase and is placed in an edge-on and uniaxial alignment state, the rod-shaped liquid crystal has an in-plane switching characteristic, the discotic liquid crystal and the rod-shaped liquid crystal are disposed in mutually separate phases, and the liquid crystal layer can be placed in an alignment state where the

discotic liquid crystal and the rod-shaped liquid crystal are aligned to have alignment directors which are directed in an identical direction.

The closest reference is Kawata who discloses a liquid crystal device, including a liquid crystal optically anisotropic layer comprising a discotic liquid crystal, (col. 18, lines 47-56), wherein the liquid crystal layer is disposed on at least one substrate subjected to an aligning treatment.

Kawata does not explicitly claim an optically anisotropic layer comprised of discotic liquid crystal and a rod-shaped liquid crystal disposed in mutually separate phases, wherein the discotic liquid crystal is in a nematic discotic phase.

Kawata teaches the preferred method of forming his invention of an optically anisotropic layer is comprised of discotic liquid crystal and a rod-shaped liquid crystal (col. 11, line 65 through col. 12, line 58) disposed in mutually separate phases, wherein the discotic liquid crystal is in a nematic discotic phase (col. 12, lines 20-22) to allow adjustment of the liquid crystal phase, alignment temperature, or to accelerate or inhibit the polymerization reaction (col. 11, line 67 through col. 12, line 2).

Kawata is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to use a discotic liquid crystal and a rod-shaped liquid crystal disposed in mutually separate phases, wherein the discotic liquid crystal is in a nematic discotic phase to allow adjustment of the liquid crystal phase, alignment temperature, or to accelerate or inhibit the polymerization reaction.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Kawata with a

discotic liquid crystal and a rod-shaped liquid crystal disposed in mutually separate phases, wherein the discotic liquid crystal is in a nematic discotic phase to allow adjustment of the liquid crystal phase, alignment temperature, or to accelerate or inhibit the polymerization reaction.

However, Kawata does not teach a device wherein the discotic liquid crystal is in a nematic discotic phase and is placed in an edge-on and uniaxial alignment state, and where the discotic liquid crystal and the rod-shaped liquid crystal are aligned to have alignment directors which are directed in an identical direction.

As to claims 17, 22, 23, 25, and 27, they are directly or indirectly dependent upon claim 16 with allowable subject matter above.

References cited but not applied are relevant to the instant Application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Art Unit: 2871

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Timothy L Rude  
Examiner  
Art Unit 2871



**JAMES DUDEK**  
**PRIMARY EXAMINER**